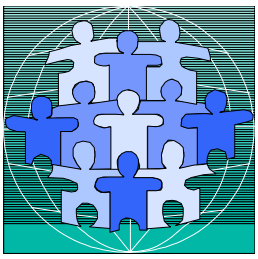

The POLICY Project

The Economic Impact of AIDS in Kenya

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AIDS has the potential to create severe economic impacts in many African countries. It is different from most other diseases because it strikes people in the most productive age groups and is essentially 100 percent fatal. The effects will vary according to the severity of the AIDS epidemic and the structure of the national economies. The two major economic effects are a reduction in the labor supply and increased costs:

Labor Supply

- The loss of young adults in their most productive years will affect overall economic output
- If AIDS is more prevalent among the economic elite, then the impact may be much larger than the absolute number of AIDS deaths indicates

Costs

- The direct costs of AIDS include expenditures for medical care, drugs, and funeral expenses
- Indirect costs include lost time due to illness, recruitment and training costs to replace workers, and care of orphans
- If costs are financed out of savings, then the reduction in investment could lead to a significant reduction in economic growth

LABOR FORCE STATISTICS				
	Economically Active Labor Force: 1991[a]		**Employment by Industry: 1991[b]**	
Sector	**'000s**	**%**	**'000s**	**%**
AGRICULTURE	7,857.0	76.6		
Agriculture, hunting, forestry and fishing			272.0	18.9
INDUSTRY	816.0	8.0		
Mining and quarrying industries			4.3	0.3
Manufacturing industries			188.9	13.1
SERVICES	1,587.0	15.4		
Electricity, gas and water			22.4	1.6
Construction			72.5	5.0
Trade, restaurants and hotels			116.7	8.1
Transport, storage and communications			76.2	5.3
Finance, insurance, real estate and business services			66.3	4.6
Community, social and personal services			622.4	43.2
TOTAL	**10,260.0**	**100.0**	**1,441.7**	**100.0**
Source: a – Europa World Year Book, 1998; b - United Nations, Statistical Yearbook, 1995, table 29				

Although Kenya's economy is somewhat diversified in terms of GDP, agriculture is the predominant economic activity. The sector accounts for about 25 percent of GDP and 70 percent of export earnings. About 80 percent of all Kenyans live in the rural areas; of these, 90 percent earn their livelihood from agriculture. The main agricultural exports are tea, coffee, and horticultural products, which together account for 45% of total export

earnings; Kenya is the third largest exporter of tea in the world. Tourism is an important industry, contributing another 19% to overall GDP, and an important source of foreign exchange. Although GDP grew at about 2.5% between 1990 and 1997, the population grew at 2.6%, so that per capita income decreased over that time period.[1]

The economic effects of AIDS will be felt first by individuals and their families, then ripple outwards to firms and businesses and the macro-economy. This paper will consider each of these levels in turn and provide examples from Kenya to illustrate these impacts.

Economic Impact of AIDS on Households

The household impacts begin as soon as a member of the household starts to suffer from HIV-related illnesses:

- Loss of income of the patient (who is frequently the main breadwinner)
- Household expenditures for medical expenses may increase substantially
- Other members of the household, usually daughters and wives, may miss school or work less in order to care for the sick person
- Death results in: a permanent loss of income, from less labor on the farm or from lower remittances; funeral and mourning costs; and the removal of children from school in order to save on educational expenses and increase household labor, resulting in a severe loss of future earning potential.

As depicted in the table below, one study found that the impact of AIDS on households in Kenya is profound. Smallholder rural households lost between 58-78 percent of household income following the AIDS death of an economically active adult in a three-adult household. The corresponding loss for an urban household ranges between 54-66 percent. These figures assume that only one member of the household dies as a result of AIDS. The household income loss is even greater, however, if the second adult and one infant of the same household dies of AIDS. In this case, the rural household lost between 116-167 percent of its income while urban households lost between 108-142 percent of its household income. Given these large income losses, households will be forced to adopt coping mechanisms, including withdrawing children from school or sending them to stay with relatives. Consequently, education of these children may be affected.[2]

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[1] World Bank (1999) "Countries: Kenya," http://www.worldbank.org/html/extdr/offrep/afr/ke2.htm; 1999 Economic Survey, Central Bureau of Statistics, Ministry of Planning and National Development, Government of Kenya.

[2] Leighton, C (1996) "The Direct and Indirect Costs of HIV/AIDS," AIDS in Kenya, edited by S Forsythe and B Rau. Family Health International(Arlington, VA).

Impact of AIDS on Households by Urban and Rural Status

	Urban Upper Class	Urban Middle Class	Rural Small Farm
Year 1 (1st adult dies)			
Household Income-Kshs	440,000	100,000	14,000
Less Earning loss	209,200	44,600	6,200
Less Hospital Expenses	80,300	4,760	4,760
Net Impact (per cent)			
(A) High estimate	66	49	78
(B) Low Estimate	54	47	58
Year 2(2nd adult and child dies)			
Household Income-Kshs	240,000	60,000	8,500
Less Earnings loss	220,000	50,000	7,000
Less Hospital costs	120,300	7,160	7,160

Source: Leighton C.(1996). In AIDS in Kenya

- By 1996, it was estimated that 300,000 children had been orphaned by AIDS. The Ministry of Health projects that the number of AIDS orphans will rise to 580,000 and 1 million by the year 2000 and 2005, respectively. The fast growing number of orphans is dependent on extended families and the community, as they are expected to provide basic services to orphanages, including health care and school fees. This leads to reduced savings at family/household level. In some instances, due to poverty, many communities have found it extremely difficult to cope with the rising number of orphans, forcing some orphans to drop out of school and start engaging in child labour. With high drop out rates of orphans, the quality of future labour force will be compromised.[3] A recent UNDP survey found that most parents do not arrange for other homes for their children before they die; instead, more and more households are being headed by children, particularly in the rural areas. Schooling becomes a luxury, and agricultural production is negatively affected, as the children are less capable than were the adults.[4] An early study in the Busia District found that 50% of the parents who died left behind from 1 to 4 children, while 19% of the parents left behind from 5 to 7 children.[5]

- Sometimes traditional practices that occur in Kenya, particularly in the rural areas, can contribute to the spread of HIV. For example, a director of the Kenyan

[3] Ministry of Health, 1996.
[4] Ayieko, MA (1998) "From Single Parents to Child-headed Households: The Case of Children Orphaned by AIDS in Kisumu and Siaya Districts," UNDP Study Paper No. 7, www.undp.org/hiv/Study/SP7.htm
[5] Ikamari, L (1991) "A Preliminary Report of the Study on: The Socio-Economic Impact of AIDS on the Malaba Border Township, Busia District, Kenya," Nairobi, Kenya: University of Nairobi, 1991.

government's AIDS efforts attributed the high prevalence rate in some parts of western Kenya to the practice of wife inheritance that exists there.[6]

Economic Impact of AIDS on Agriculture

Agriculture is the largest sector in most African economies accounting for a large portion of production and a majority of employment. Studies done in Tanzania and other countries have shown that AIDS will have adverse effects on agriculture, including loss of labor supply and remittance income. The loss of a few workers at the crucial periods of planting and harvesting can significantly reduce the size of the harvest. In countries where food security has been a continuous issue because of drought, any declines in household production can have serious consequences. Additionally, a loss of agricultural labor is likely to cause farmers to switch to less-labor-intensive crops. In many cases this may mean switching from export crops to food crops. Thus, AIDS could affect the production of cash crops as well as food crops.

- A simulation study of the potential impact of HIV/AIDS by sector projects that agriculture will suffer the greatest impact because the largest share of the labor force works in agriculture. The effect of AIDS will be to lower the value of agricultural production between 1.7% and 2.4% by 2010.[7]

Commercial and/or estate farming in Kenya interacts with smallholder farming in several ways:

- Smallholder farmers are a major source of labour for agro-estates;
- Migrants working in agro-estates send remittances to rural areas and thereby contribute to the subsistence economy of smallholder farmers;
- Smallholder agriculture produces goods and services (e.g. food crops which are essential needs for agro-estate workers);
- Smallholder agriculture forms a bulk of the market of most of the products produced by some of the agro-estates; and
- In some cases, survival of agro-estates is hinged on external producers (the so-called out-growers) who provide the bulk of raw materials for processing.

In view of the complex interaction described above, what happens in the commercial agro-estate sector will have an effect on the smallholder and vice versa. A recent study examined these effects for two farming systems: (a) a semi-subsistence sugarcane out-growers who supply sugar cane to Sugar companies in Nyanza Province, and (b) a semi-subsistence vegetable growers (an irrigation scheme) in Eastern province. Morbidity and

[6] Cited in Topouzis, D (1998) "The Implications of HIV/AIDS for Rural Development Policy and Programming: Focus on Sub-Saharan Africa," UNDP HIV and Development Programme Study Paper #6.
[7] Leighton, C (1993) "Economic Impacts of the HIV/AIDS Epidemic in African and Asian Settings: Case Studies of Kenya and Thailand," Abt Associates (Bethesda, MD).

mortality in the households had led to a decrease of acreage, loss of income, increased dependency ratio and general increase in food insecurity. This finding is similar to what has been observed in other countries with similar social, economic, and agro-ecological environments. Illness and death of out-growers meant a decrease in supply of sugarcane to the sugar factory. The impact is significant, given that for the two sugar agro-estates surveyed in Nyanza Province, the nuclear estates (company farm under cane) produces only 10 percent of the cane processed in the factories, while out-growers, the majority of whom are smallholder farmers, produce 90 percent of the cane.[89] Given a similar set up of smallholder and agro-estate agriculture in most parts of the country, these results can be generalised for the whole country.

The study examines further the impact of HIV/AIDS in detail for five commercial agro-estates in three Kenyan provinces; Nyanza, Rift Valley and Eastern. Cumulative cases of AIDS in the agro-estates account for as high as 30 percent of the workforce in Nyanza, 12 percent in the Rift Valley and 3 percent in Eastern province. Except for the agro-estate in Eastern province, medical expenses for the other agro-estates in Nyanza and Rift Valley have increased significantly over the last decade in response to opportunistic diseases arising from HIV/AIDS cases among employees and their dependants. External medical costs, or those incurred by the employer, in the agro-estate surveyed rose from a modest Kshs. 300,000 in the 1980s to Kshs. 8.1 million in 1997.[10] Internal medical costs, or those incurred by the individual, also rose exponentially from a mere Kshs. 1.5 million in 1989 to Kshs. 11.3 million in 1997.

Records of labour time lost due to morbidity kept by one company in the study showed that between 1995 and 1997, the company lost a total of 8,007 labour days due to illness of its employees, of which a significant portion was attributed to HIV-related illnesses. Another company reported having lost a total of 660 labour days between 1995 and 1997 due to sick-offs among employees affected by HIV and AIDS.

An indirect effect of absenteeism is that it results into extra work for other ***healthy employees*** who have to stand in for sick colleagues. In some of the companies, healthy employees were increasingly working extra hours to compensate for the time lost by their absent (sick) colleagues. In so doing, not only did companies pay more in terms of overtime but workers interviewed pointed out that they were overworked and exhausted. According to the Engineering manager of one of the companies, working longer hours had produced stress among employees and was responsible for a decline of both quantity and quality of the final product (sugar). Since healthy employees began to work longer

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[8] This material and the following paragraphs are from: Rugalema, M and Weigang (1998) "HIV/AIDS and the Commercial Agricultural Sector in Kenya: Impact,Vulnerability, Susceptibility and Coping Strategies," Nairobi. For similar findings, see Barnett and Blaikie (1992), The Impact of AIDS on Farming Systems in Uganda, pp.127-151 in Barnett and Blaikie (eds), AIDS in Africa: Its present and future impact

[9] This material and the following paragraphs are from: Rugalema, M and Weigang (1998) "HIV/AIDS and the Commercial Agricultural Sector in Kenya: Impact,Vulnerability, Susceptibility and Coping Strategies," Nairobi. For similar findings, see Barnett and Blaikie (1992), The Impact of AIDS on Farming Systems in Uganda, pp.127-151 in Barnett and Blaikie (eds), AIDS in Africa: Its present and future impact

[10] The exchange rate was approximately Kshs 50 to a dollar in the 1980s and Kshs 60 to a dollar in the 1990s.

hours, around 1993, the recovery ratio (raw cane: sugar) had declined by almost 50 percent, that is, from about 8:1 in 1993 to 12:1 in 1997. Another company surveyed reported a 67 percent decline in recovery ratio during the same period.

Data available on funeral costs revealed that, on average, a company spends about Kshs 40,000-100,000 per funeral. The table below depicts some funeral costs incurred by a Nyanza-based company over a period of six years; note that this company had recorded 15 deaths (of which 11 were said to be AIDS deaths) in the first six months of 1998. It should be noted that implicit costs such as labour time lost by employees to attend funerals are not included.

Table 4: Funeral expenses incurred by a Nyanza-based company (Kshs)

Year	**1992/93**	**1993/94**	**1994/95**	**1995/96**	**1996/97**	**1997/98**
Expenditure	165,135	307,899	392,297	457,236	685,669	457,236
Remarks		up to April 1994				up to May 1998

Source: Rugalema et al (1998)
Note I: Figures are rounded to the nearest zero decimal point.

One final result from this paper is that employees are much more likely to leave due to illness and death now than in the 1980s, when these reasons were last on the list of reasons for exit. Between 1992 and 1997, 41% of employees left the company because of either illness or death.

Economic Impact of AIDS on Firms

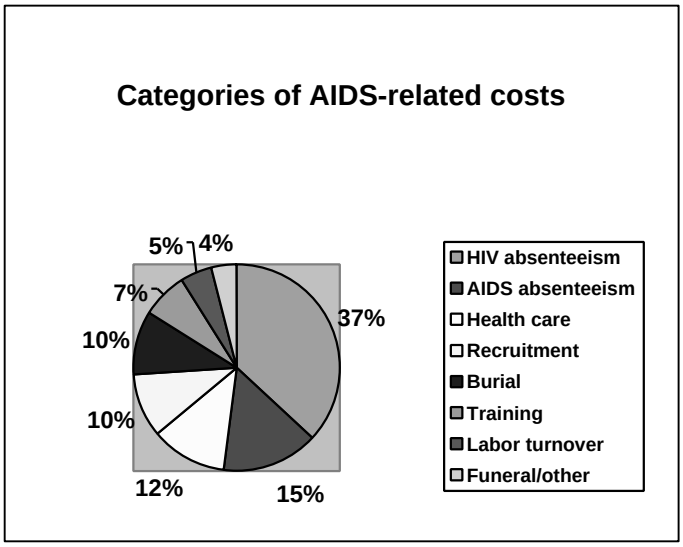
AIDS may have a significant impact on some firms. AIDS-related illnesses and deaths to employees affect a firm by both increasing expenditures and reducing revenues. Expenditures are increased for health care costs, burial fees and training and recruitment of replacement employees. Revenues may be decreased because of absenteeism due to illness or attendance at funerals and time spent on training. Labor turnover can lead to a less experienced labor force that is less productive.

Factors Leading to Increased Expenditure	Factors Leading to Decreased Revenue
Health care costs	Absenteeism due to illness
Burial fees	Time off to attend funerals
Training and recruitment	Time spent on training
	Labor turnover

- In 1995, a survey found that a Kenyan company spends about US$45 per employee per year for HIV/AIDS related costs, or 3 percent of company profits. It was projected that this cost would increase to US$120 per employee per year, equivalent to 8 percent of company profits, by the year 2000. The report further notes that in 1992, an average company in Kenya incurred mean annual costs associated with

AIDS of approximately US$140,000. This cost was expected to rise to US$403,000 by the year 2005.[11]

- A study of four Kenyan firms examined in detail the costs the firms have experienced due to HIV/AIDS. Results showed that companies spent on average 4 percent of their annual profits on their employees suffering from AIDS. The most significant factor in increased labor costs was absenteeism due to HIV or AIDS, which accounted for 52 percent of total AIDS-related costs, as shown in the figure below.



- The four firms spent a total of between Kshs 1.1 million (US$21,312) and Kshs 3.1 million (US$61,132) on HIV/AIDS-related costs. In terms of cost per employee, the companies spent on average Kshs 1,487 (US$30) in 1994. Although the figures may look insignificant, the impact may be profound; for example, a company like Muhoroni Sugar has not recorded profits for a long time, thus constraining the firm's ability to meet its expenditure requirements. The table below summarizes the impact of AIDS at the firm level. The study estimated that between 1992 and 2005, the cost of HIV/AIDS is expected to increase from US$20,339 to US$48,402 in heavy industry; from US$67,183 to US$163,685 in transportation; from US$184,543 to US$533,054 in wood processing; and from US$285,847 to US$866,217 on sugar estates. AIDS is therefore going to increase labour costs and reduce company profits unless appropriate prevention measures are implemented in the workplace.[12]

[11] World Bank (1995) "AIDS Prevention and Mitigation in Sub-Saharan Africa," Washington DC.
[12] Roberts, M and B Rau (1994) "Private Sector AIDS Policy African Workplace Profiles: Case Studies on Business Managing HIV/AIDS," The AIDSCAP Electronic Library (Family Health International/The AIDS Control and Prevention Project, Durham, North Carolina); Forsythe, S and B Rau (1996) AIDS in Kenya (Family Health International: Arlington, VA).

Impact at Firm Level

	1994	1994	2005	2005
Company/Cost	Kshs	US$	Kshs	US$
AUTO KENYA Co. *				
AIDS Impact-Total cost	1,065,622	21,312	2,503,729	50,074
AIDS Impact -Per employee	859	17	2,019	40
KENYA TRANSPORT *				
AIDS Impact-Total cost	3,056,618	61,132	7,369,447	147,389
AIDS Impact -Per employee	1,403	28	3,382	68
MUHORONI SUGAR Co.				
AIDS Impact-Total cost	2,915,163	58,303	5,883,711	117,674
AIDS Impact -Per employee	2,425	49	4,895	98
WESTERN WOOD Co. *				
AIDS Impact-Total cost	2,031,518	40,630	5,124,970	102,449
AIDS Impact -Per employee	1,262	25	3183	64

Source: Private Sector AIDS Policy, African Workplace Profiles
* fictitious name to preserve anonymity

For some smaller firms the loss of one or more key employees could be catastrophic, leading to the collapse of the firm. In others, the impact may be small. Firms in some key sectors, such as transportation and mining, are likely to suffer larger impacts than firms in other sectors. In poorly managed situations the HIV-related costs to companies can be high. However, with proactive management these costs can be mitigated through effective prevention and management strategies.

Impacts on Other Economic Sectors

AIDS will also have significant effects in other key sectors. Among them are health, transport, mining, education and water.

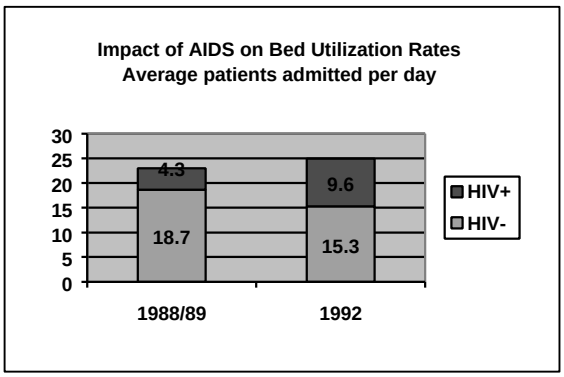
- **Health.** AIDS will affect the health sector for two reasons: (1) it will increase the number of people seeking services and (2) health care for AIDS patients is more expensive than for most other conditions. Governments will face trade-offs along at least three dimensions: treating AIDS versus preventing HIV infection; treating AIDS

versus treating other illnesses; and spending for health versus spending for other objectives. Maintaining a healthy population is an important goal in its own right and is crucial to the development of a productive workforce essential for economic development.

The increase in morbidity associated with HIV/AIDS has made the disease very expensive; hence Kenya requires a substantial amount of resources to care for and treat AIDS patients. One study estimated that the cost of hospital care for all AIDS patients, using a low-cost scenario, would rise to Kshs 3.7 billion in 2010 from Kshs 480 million in 1990. The cost using a high-cost scenario was projected to rise to Kshs 11.2 billion by the year 2010.[13] The *Sessional Paper No. 4 of 1997 on AIDS in Kenya* estimates the direct cost of treating a new AIDS patient at Kshs 34,680 while indirect costs amount to Kshs 538,560. This brings the estimated total cost of AIDS (direct and indirect) to be Kshs 573,240. The direct cost of AIDS includes cost of drugs, laboratory tests, radiology and hospital overhead costs, while indirect cost encompasses the average productive life-years lost.

- One study predicts that by the year 2000, expenditure on AIDS will equal the entire 1993/94 recurrent budget of the Ministry of Health. The analysis further noted that in 1991, the total cost of AIDS to the country ranged between 2-4 percent of GDP but that this would increase to 15 percent by the year 2000. The rising cost of AIDS is extremely worrying for a low-income country such as Kenya, where per capita income is only US$280.[14]

- The AIDS pandemic has also over-stretched hospital facilities; according to one estimate, by the year 2010, under a "high" scenario, even if only 25% of AIDS patients are treated, AIDS patients will occupy over 60 percent of all hospital beds.[15] Another study estimated current bed occupancy rates for HIV/AIDS-related opportunistic diseases at adult wards in major urban hospitals, including Kenyatta National Hospital, at 30 percent, while district hospitals had bed occupancy rates ranging between 10-30 percent. However, the study noted that significant differences exist with Kisumu and Busia districts recording bed occupancy rates by HIV/AIDS related illnesses in the magnitude of 70 percent. These bed occupancy rates greatly constrain the hospital facilities, undermining normal



[13] Leighton, C (1996) "The Direct and Indirect Costs of HIV/AIDS," in AIDS in Kenya, edited by S Forsythe and B Rau. Family Health International(Arlington, VA).
[14] Nalo, DSO and MI Aoko (1994) "Macro Economic Impact of HIV/AIDS in Kenya," Nairobi.
[15] Leighton, C (1996) "The Direct and Indirect Costs of HIV/AIDS," in AIDS in Kenya, edited by S Forsythe and B Rau. Family Health International(Arlington, VA).

operations.[16] Although the average number of patients admitted daily to Kenyatta National Hospital only changed from 23.0 to 24.9, the proportion of HIV-positive patients increased from 18.7% to 38.6%, indicating some crowding out of HIV-negative patients.[17]

- **Transport.** The transport sector is especially vulnerable to AIDS and important to AIDS prevention. Building and maintaining transport infrastructure often involves sending teams of men away from their families for extended periods of time, increasing the likelihood of multiple sexual partners. The people who operate transport services (truck drivers, train crews, sailors) spend many days and nights away from their families. Most transport managers are highly trained professionals who are hard to replace if they die. Governments face the dilemma of improving transport as an essential element of national development while protecting the health of the workers and their families.

- **Mining.** The mining sector is a key source of foreign exchange for many countries. Most mining is conducted at sites far from population centers forcing workers to live apart from their families for extended periods of time. They often resort to commercial sex. Many become infected with HIV and spread that infection to their spouses and communities when they return home. Highly trained mining engineers can be very difficult to replace. As a result, a severe AIDS epidemic can seriously threaten mine production.

- **Education.** AIDS affects the education sector in at least three ways: the supply of experienced teachers will be reduced by AIDS-related illness and death; children may be kept out of school if they are needed at home to care for sick family members or to work in the fields; and children may drop out of school if their families can not afford school fees due to reduced household income as a result of an AIDS death. Another problem is that teenage children are especially susceptible to HIV infection. Therefore, the education system also faces a special challenge to educate students about AIDS and equip them to protect themselves.

- **Water.** Developing water resources in arid areas and controlling excess water during rainy periods requires highly skilled water engineers and constant maintenance of wells, dams, embankments, etc. The loss of even a small number of highly trained engineers can place entire water systems and significant investment at risk. These engineers may be especially susceptible to HIV because of the need to spend many nights away from their families.

Macroeconomic Impact of AIDS

[16] Ngugi, E (1995) "A Desk Review of Medium Term Plan II (MTPII)," Nairobi.
[17] Floyd, K and CF Gilks (1996) "Impact of, and Response to, the HIV Epidemic at Kenyata National Hospital, Nairobi," Report 1 (April), Liverpool School of Tropical Medicine.

The macroeconomic impact of AIDS is difficult to assess. Most studies have found that estimates of the macroeconomic impacts are sensitive to assumptions about how AIDS affects savings and investment rates and whether AIDS affects the best-educated employees more than others. Few studies have been able to incorporate the impacts at the household and firm level in macroeconomic projections. Some studies have found that the impacts may be small, especially if there is a plentiful supply of excess labor and worker benefits are small.

There are several mechanisms by which AIDS affects macroeconomic performance.

- AIDS deaths lead directly to a reduction in the number of workers available. These deaths occur to workers in their most productive years. As younger, less experienced workers replace these experienced workers, worker productivity is reduced.

- A shortage of workers leads to higher wages, which leads to higher domestic production costs. Higher production costs lead to a loss of international competitiveness which can cause foreign exchange shortages.

- Lower government revenues and reduced private savings (because of greater health care expenditures and a loss of worker income) can cause a significant drop in savings and capital accumulation. This leads to slower employment creation in the formal sector, which is particularly capital intensive.

- Reduced worker productivity and investment leads to fewer jobs in the formal sector. As a result some workers will be pushed from high paying jobs in the formal sector to lower paying jobs in the informal sector.

- The overall impact of AIDS on the macro-economy is small at first but increases significantly over time.

Simulation results on the macroeconomic impact of HIV/AIDS in Kenya reveal that the impact of AIDS could be substantial, given that 80 percent of those infected are in the economically active age group, aged 15-49 years. With high mortality and morbidity of the most productive labour force, GDP is projected to decline by 14.5 percent in the year 2005 while per capita income would drop by 10 percent, due to the impact of AIDS. The study also predicts a 15 percent drop in savings by 2005; this will lead to a reduction in formal sector employment as a proportion of total employment from 15 per cent in the "No AIDS" scenario to 13 percent in the ''With AIDS'' scenario. The simulation also predicted a fall in labour productivity as more experienced workers are replaced by younger workers. To counter the effects of reduced domestic savings, per capita income, and GDP growth due to AIDS, the study finds that the economy must double its foreign aid from 4 percent of GDP to 8 percent of GDP beginning in 1996. In fact, not only has foreign aid not doubled over time, but may actually be declining. These developments are detrimental to the Kenyan economy, currently in a recession, with low economic growth, low savings and investment, and low foreign direct investments. The challenge

posed by AIDS to the outlined macro economic variables is real and requires deliberate efforts if the effects are to be contained.[18]

What Can Be Done?

AIDS has the potential to cause severe deterioration in the economic conditions of many countries. However, this is not inevitable. There is much that can be done now to keep the epidemic from getting worse and to mitigate the negative effects. Among the responses that are necessary are:

- **Prevent new infections.** The most effective response will be to support programs to reduce the number of new infections in the future. After more than a decade of research and pilot programs, we now know how to prevent most new infections. An effective national response should include information, education and communications; voluntary counseling and testing; condom promotion and availability; expanded and improved services to prevent and treat sexually transmitted diseases; and efforts to protect human rights and reduce stigma and discrimination. Governments, NGOs and the commercial sector, working together in a multi-sectoral effort can make a difference. Workplace-based programs can prevent new infections among experienced workers.

- **Design major development projects appropriately.** Some major development activities may inadvertently facilitate the spread of HIV. Major construction projects often require large numbers of male workers to live apart from their families for extended periods of time, leading to increased opportunities for commercial sex. A World Bank-funded pipeline construction project in Cameroon was redesigned to avoid this problem by creating special villages where workers could live with their families. Special prevention programs can be put in place from the very beginning in construction projects, large-scale agricultural projects, or transport sector projects, where commercial sex might be expected to flourish.

- **Programs to address specific problems.** Special programs can mitigate the impact of AIDS by addressing some of the most severe problems. Reduced school fees can help children from poor families and AIDS orphans stay in school longer and avoid deterioration in the education level of the workforce. Tax benefits or other incentives for training can encourage firms to maintain worker productivity in spite of the loss of experienced workers.

    - A GTZ project in Mwingi and Makueni Districts attempts to increase various households' food self-reliance. The project incorporatee HIV/AIDS awareness

[18] Hancock, J, D Nalo, M Aoko, R Mutemi, H Clark, S Forsythe (1996) "The macroeconomic impact of AIDS in Kenya," in AIDS in Kenya, ed. by S Forsythe and B Rau, Family Health International (Arlington, VA: 1996); Timothy Takona, USAID Mission, personal communication, July 1999.

training in the program, after observing that people in the area perceived HIV/AIDS as only a medical problem, rather than a broader problem.[19]

- **Mitigate the effects of AIDS on poverty.** The impacts of AIDS on households can be reduced to some extent by publicly funded programs to address the most severe problems. Such programs have included home care for people with HIV/AIDS, support for the basic needs of the households coping with AIDS, foster care for AIDS orphans, food programs for children and support for educational expenses. Such programs can help families and particularly children survive some of the consequences of an adult AIDS death that occur when families are poor or become poor as a result of the costs of AIDS.

A strong political commitment to the fight against AIDS is crucial. Countries that have shown the most success, such as Uganda, Thailand and Senegal, all have strong support from the top political leaders. This support is critical for several reasons. First, it sets the stage for an open approach to AIDS that helps to reduce the stigma and discrimination that often hamper prevention efforts. Second, it facilitates a multi-sectoral approach by making it clear that the fight against AIDS is a national priority. Third, it signals to individuals and community organizations involved in the AIDS programs that their efforts are appreciated and valued. Finally, it ensures that the program will receive an appropriate share of national and international donor resources to fund important programs.

Perhaps the most important role for the government in the fight against AIDS is to ensure an open and supportive environment for effective programs. Governments need to make AIDS a national priority, not a problem to be avoided. By stimulating and supporting a broad multi-sectoral approach that includes all segments of society, governments can create the conditions in which prevention, care and mitigation programs can succeed and protect the country's future development prospects.

[19] Hemrich, G and B Schneider (1997) "HIV/AIDS as a cross-sectoral issue for Technical Cooperation," GTZ Working Paper No. 1 (Germany: May 1997).